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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,463	03/19/2001	Masumi Kubo	3693-17	8977

7590 11/29/2002

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EXAMINER

SCHECHTER, ANDREW M

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/810,463

**Applicant(s)**

KUBO ET AL.

**Examiner**

Andrew Schechter

**Art Unit**

2871

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Liquid crystal display device having sub-pixel electrodes at different heights and defect correction method thereof".

### ***Claim Objections***

2. Claims 1 and 10 are objected to because of the following informalities: "counter substrate" in lines 7 and 7-8, respectively, should be "counter electrode". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by *Nishiki*, Japanese Patent Document No. 11-109417.

*Nishiki* discloses [see Fig. 7, for instance] a liquid crystal display device comprising substrates [7], liquid crystal [15], switching elements [3], pixel electrodes [10,

11 combined], the second substrate having a counter electrode [14], wherein each pixel has a first sub-pixel electrode [10] and a second sub-pixel electrode [11], with [10] farther from [14] than [11] is from [14], and the second sub-pixel electrode connected to the switching element via a connection line [the segment of 4 between 10 and the lower contact hole 8, in the lower half of the pixel] provided separately from a path which electrically connects the first sub-pixel electrode to the switching element [this path is the part of 4 in the top half of the pixel]. Claim 1 is therefore anticipated.

***Allowable Subject Matter***

5. Claims 2-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 10-19 would be allowable if rewritten or amended to overcome the objection to claim 10 set forth in this Office action.

7. The following is a statement of reasons for the indication of allowable subject matter:

*Nishiki* discloses, in embodiments having the necessary connection line, that the transparent electrode is above the reflective one, so claim 2 is not anticipated by *Nishiki*. In particular, Fig. 5 [in which elements 4 and 11 are the same] discloses the reflection electrode above the transparent one, but the connection from the switching element to the second sub-pixel (the reflection electrode) is the direct contact between the first and second sub-pixels, not via a connection line. U.S. Patent No. 6,195,140 to

*Kubo et al.* is a patent which relies on *Nishiki* for foreign priority. Its Fig. 14 is essentially the same as *Nishiki's* Fig. 7. *Kubo's* Figs. 32-33 show the reflection sub-pixel electrode overlapping the transparent sub-pixel electrode via a Mo layer [214]. It is the interpretation of the examiner that this layer does not constitute a "connection line" in the sense of claims 1 and 10 (essentially because it extends as a "line" parallel to the juncture instead of in the direction across the juncture). If the applicants have a different interpretation, this should be brought to the attention of the examiner. Claims 2-9 would therefore be allowable if rewritten appropriately.

Neither *Nishiki* nor *Kubo* disclose the method of cutting the connection line to disconnect the second sub-pixel in the event of a short, as recited in claim 10. U.S. Patent No. 5,977,563 to *Kubo et al.*, made of record by the applicant, discloses the basic technique of correcting for defects when pixel electrodes short to each other by cutting connection lines to the pixel electrodes. However, it does not disclose sub-pixels of different heights with the particular connection line recited in claims 1 and 10. Claims 10-19 would therefore be allowable if the objection to claim 10 is overcome.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (703) 305-3492. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 746-4711

for regular communications and (703) 746-4711 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Andrew Schechter  
November 25, 2002



ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800